

AMENDMENTS TO THE CLAIMS

1. (Previously presented) A method of determining the current service level of a wireless communication device, the method comprising:

providing at least three distinct levels of service including a storing service mode, a basic service mode, and a full service mode;

distinguishing between the storing service mode and the basic service mode based upon one or more characteristics of a forward channel from a messaging system to the wireless communication device; and

distinguishing between the basic service mode and the full service mode based upon one or more characteristics of a reverse channel from the wireless communication device to the messaging system.

2. (Previously presented) The method of Claim 1, wherein new messages destined for the wireless communication device are stored by the messaging system while the wireless communication device is providing the storing service mode.

3. (Previously presented) The method of Claim 2, wherein the new messages destined for the wireless communication device are transmitted to the wireless communication device by the messaging system and stored messages that remain undelivered as a result of the wireless communication device providing the storing service mode remain undelivered while the wireless communication device is providing the basic service mode.

4. (Previously presented) The method of Claim 3, wherein both new messages and stored messages are transmitted to the wireless communication device by the messaging system while the wireless communication device is providing the full service mode.

5. (Original) The method of Claim 1, wherein the one or more characteristics of the forward channel includes the forward channel's signal quality.

6. (Previously presented) The method of Claim 5 further including generating a signal quality metric representative of the forward channel's signal quality over a predetermined period of time.

7. (Previously presented) The method of Claim 1, wherein the one or more characteristics of the forward channel includes a status.

8. (Previously presented) The method of Claim 7, wherein the status represents a value from one of a plurality of states, the method further including associating each of the plurality of states with a weight.

9. (Previously presented) The method of Claim 8, wherein the plurality of states includes:

no signal;

synchronization error;

frame error; and

good frame.

10. (Previously presented) The method of Claim 8 further including generating a signal quality metric representative of the forward channel's signal quality over a predetermined period of time based upon weighted values of the status over the predetermined period of time.

11. (Original) The method of Claim 1, wherein verification of the reverse channel is achieved upon receipt of an acknowledgment from the messaging system on the forward channel corresponding to a message transmitted to the messaging system on the reverse channel.

12. (Previously presented) A method of transitioning between service modes and indicating a current service mode to a user of a wireless communication device, the method comprising:

determining a status of a signal associated with a forward channel from a messaging system to the wireless communication device;

determining a quality metric based upon the status over a predetermined period of time;

LAW OFFICES OF
CHRISTENSEN O'CONNOR JOHNSON KINDNESS^{PLLC}
1420 Fifth Avenue, Suite 2800
Seattle, Washington 98101
206.682.8100

providing at least a full service mode, a basic service mode, and a storing service mode;

if the current service mode is the storing service mode, transitioning to the basic service mode after determining the quality metric is better than a first predetermined threshold;

if the current service mode is the basic service mode, transitioning to the full service mode after verification of a reverse channel from the wireless communication device to the messaging system; and

if the current service mode is the full service mode, transitioning to the basic service mode after determining the reverse channel has become degraded.

13. (Previously presented) The method of Claim 12 further comprising providing an indication of the current service mode to the user.

14. (Previously presented) The method of Claim 12 further comprising:

determining an initial value for the current service mode by:

inspecting the signal for synchronization information,

initializing the current service mode to the storing service mode if no synchronization information is found, and

initializing the current service mode to the basic service mode if synchronization information is found.

15. (Previously presented) The method of Claim 12 further comprising:

in the basic service mode, transitioning to the storing service mode after the status indicates the wireless communication device is out of range;

in the full service mode, transitioning to the basic service mode after determining the quality metric is worse than a second predetermined threshold; and

in the full service mode, transitioning to the storing service mode after the status indicates the wireless communication device is out of range.

16. (Previously presented) The method of Claim 12, wherein the storing service mode includes a first storing state and a second storing state, and wherein the basic service mode

includes a first basic state, a second basic state, and a third basic state, the method further comprising:

in the first storing state, re-initializing a service quality monitoring process after the status indicates a good frame has been detected on the forward channel;

in the second storing state, beginning a registration process after the status indicates a ping has been received from the messaging system on the forward channel;

in the first basic state, transitioning to the second basic state after determining the quality metric is better than a third predetermined threshold;

in the second basic state, transitioning to the third basic state after determining the quality metric is worse than the second predetermined threshold; and

in the third basic state, transitioning to the second basic state after determining the quality metric is better than the third predetermined threshold.

17. (Original) The method of Claim 16, wherein the first, second, and third predetermined thresholds are programmable parameters.

18. (Original) The method of Claim 12, wherein new messages destined for the wireless communication device are not received by the wireless communication device while the wireless communication device is in the storing service mode, wherein new messages destined for the wireless communication device are received by the wireless communication device and stored messages that remain undelivered as a result of the wireless communication device having been in the storing service mode remain undelivered while the wireless communication device is in the basic service mode, and wherein both new messages and stored messages are received by the wireless communication device while the wireless communication device is in the full service mode.

19. (Previously presented) The method of Claim 12 further including determining whether or not to attempt registering with the messaging system based upon the current service mode.

20. (Previously presented) The method of Claim 12 further including periodically evaluating the quality metric.

21. (Previously presented) A method of registering a wireless communication device with a messaging system, the method comprising:

providing a current service mode in one of a plurality of states including:

a storing service mode in which new messages destined for the wireless communication device are not received by the wireless communication device,

a basic service mode in which new messages destined for the wireless communication device are received by the wireless communication device and stored messages that remain undelivered as a result of the wireless communication device having been in the storing service mode remain undelivered while the wireless communication device is in the basic service mode, and

a full service mode in which both new messages and stored messages are received by the wireless communication device while the wireless communication device is in the full service mode;

a registration process determining what action to take based upon the current service mode.

22. (Previously presented) The method of Claim 21 further including:

the registration process transmitting one or more registration messages to the messaging system during the basic service mode; and

the registration process transmitting no registration messages to the messaging system during the full service mode and the storing service mode.

23. (Previously presented) The method of Claim 21 further including:

determining a status of a signal associated with a forward channel from a messaging system to the wireless communication device;

determining a quality metric based upon the status over a predetermined period of time;

if the current service mode is the storing service mode, transitioning to the basic service mode after determining the quality metric is better than a first predetermined threshold;

if the current service mode is the basic service mode, transitioning to the full service mode after verification of a reverse channel from the wireless communication device to the messaging system; and

if the current service mode is the full service mode, transitioning to the basic service mode after determining the reverse channel has become degraded.

24. (Previously presented) The method of Claim 23 further including:

determining an initial value for the current service mode by

inspecting the signal for synchronization information,

initializing the current service mode to the storing service mode if no synchronization information is found, and

initializing the current service mode to the basic service mode if synchronization information is found.

25. (Previously presented) The method of Claim 23 further including:

in the basic service mode, transitioning to the storing service mode after the status indicates the wireless communication device is out of range;

in the full service mode, transitioning to the basic service mode after determining the quality metric is worse than a second predetermined threshold; and

in the full service mode, transitioning to the storing service mode after the status indicates the wireless communication device is out of range.

26. (Original) A wireless communication device comprising:

a storage device having stored therein a service mode determination routine for providing a plurality of service modes including a full service mode, a basic service mode and a storing service mode;

a processor coupled to the storage device to execute the service mode determination routine to evaluate a quality metric associated with a forward channel from a messaging system and identify a current service mode from the plurality of service modes, where:

the quality metric is generated based upon a status of a signal associated with the forward channel;

the current service mode is updated to the basic service mode from the storing service mode if the quality metric is better than a first predetermined threshold;

the current service mode is updated to the full service mode from the basic service mode after verifying a reverse channel from the wireless communication device to the messaging system;

the current service mode is updated to the basic service mode from the full service mode after determining the reverse channel has become degraded.

27. (Original) The wireless communication device of Claim 26, wherein new messages destined for the wireless communication device are not received by the wireless communication device while the wireless communication device is in the storing service mode, wherein new messages destined for the wireless communication device are received by the wireless communication device and stored messages that remain undelivered as a result of the wireless communication device having been in the storing service mode remain undelivered while the wireless communication device is in the basic service mode, and wherein both new messages and stored messages are received by the wireless communication device while the wireless communication device is in the full service mode.

28. (Original) The wireless communication device of Claim 27 wherein:

the current service mode is updated to the storing service mode from the basic service mode after the status indicates the wireless communication device is out of range;

the current service mode is updated to the basic service mode from the full service mode after determining the quality metric is worse than a second predetermined threshold; and

the current service mode is updated to the storing service from the full service mode after the status indicates the wireless communication device is out of range.

29. (Canceled)

30. (Previously presented) A method comprising:

determining a status of a forward channel signal from a messaging system to a wireless communication device;

determining a quality metric based upon the status of the forward channel signal over a predetermined period of time;

providing at least a full service mode, a basic service mode, and a storing service mode, wherein:

the storing service mode comprises at least a first storing state and a second storing state, and

the basic service mode comprises at least a first basic state, a second basic state, and a third basic state;

if the current service mode is the storing service mode, transitioning to the basic service mode after determining the quality metric is better than a first predetermined threshold;

if the current service mode is the basic service mode, transitioning to the full service mode after verification of a reverse channel from the wireless communication device to the messaging system; and

if the current service mode is the full service mode, transitioning to the basic service mode after determining the reverse channel has become degraded or if the quality metric is worse than a second predetermined threshold.

31. (Currently amended) The method of Claim 30, wherein the first basic state is a state in which the wireless communication device is barely in range, the second basic state is a state in which ~~in which~~ the forward channel signal is of good quality and the reverse channel is

not verified, and the third basic state is a state in which the forward channel reception is breaking up.

32. (Previously presented) The method of Claim 30, wherein the first storing state is a state in which the wireless communication device is out of range and the second storing state is a state in which the wireless communication device is almost out of range.

33. (Previously presented) The method of Claim 30, further comprising transitioning to the first storing state from any other mode after receiving an out of range status from a forward channel monitoring logic.

34. (Previously presented) The method of Claim 30, further comprising transitioning from the first basic state to the second basic state if the quality metric is better than a third predetermined threshold.

35. (Previously presented) The method of Claim 34, further comprising transitioning from the first basic state or the third basic state to the second storing state if the quality metric is worse than a fourth predetermined threshold.

36. (Previously presented) The method of Claim 30, further comprising transitioning from the second basic state to the third basic state if the quality metric is worse than the second predetermined threshold.

37. (Previously presented) The method of Claim 30, wherein the first basic state is the initial state on reset if a synchronization signal is found on the forward channel.

38. (Previously presented) The method of Claim 30, wherein the first storing state is the initial state on reset if a synchronization signal is not found on the forward channel.